HEALTH CARE USE BEHAVIORS AMONG THE ELDERLY

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Gerontological Society 32nd Annual Meetings
November 26, 1979
Washington, D.C.

Abstract

To date only limited research has been undertaken to document the long term consistency of individuals health service use behaviors. In an elderly population an understanding of the extent of health service use and the pattern of this use is critical if health care intervention programs are to be designed that focus on encouraging the: appropriate development of; effective use of; and rational allocation of scarce health resources. This research has investigated the health service use behaviors of a random sample (N=4805) of community, dwelling and institutional residents 65 and over in Manitoba, Canada, where comprehensive health services are publically insured or subsidized. Complete health care use behaviors for the years 1970-1977 have been summarized on a daily basis and linked with responses to an extensive needs assessment survey conducted by the provincial government in 1971. Preliminary findings have described health care use behaviors of the sample based on the total individual use of any and all physician, hospital, homecare, or nursing home services during each day of the 8 year period. Consistent patterns of behavior have been identified across individuals. These patterns are influenced by the level and type of need and are associated with the sociological, psychological, and environmental characteristics of the individual. Supported by Health & Welfare Canada, Grant #6607-1157.

1. *This study is supported by Health & Welfare Canada NHRDP Grant #6607-1157 of which the authors are two of three co-principal investigators.*

2. *The authors acknowledge with appreciation the assistance of project collegues N.P. Roos and E. Shapiro and project staff efforts especially those of T. Scott in the preparation of this report.*

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BACKGROUND:

The research reported, here, is based on two very rich and complex data sets. The Manitoba Department of Health and Social Development (now Health and Community Services) undertook a major study of the needs of Elderly Manitoba (N=4800) and the resources (N=680) available to meet these needs in 1971 and a smaller Update Study of 1300 persons and 680 resources in 1976. Further, with funding from Health and Welfare Canada (NHRDP #6607-1157), the health service utilization of these persons and their spouses has been extracted for the years 1970-1977. Therefore, this study has two data bases: the first, the interview data on 6100 Manitobans age 60 and over, from two area probability random samples of all elderly Manitobans; and the second, the medical, hospital, personal care home and home care service utilization of 8500 Manitobans age 60 and over for the eight year period surrounding the two interview dates.

The major task over the first stage of this research has been to select the variables to be studied in detail from the two data bases and to merge these bases into a single data set for analytic purposes. You will appreciate that this has been an enormous task knowing that the interview data set contains over 600 variables on the 6100 individuals and the utilization data set contains as many as 30 variables on each of 3000 days for the 8500 persons included in the study. The current merged data set contains just under 300 medical and hospital summary and interview items for the 24 months surrounding the 1971 interview of 4558 of those individuals interviewed. Work continues on this facet of the study; i.e., expanding the merged data set to contain all eight years of data and the total 8500 persons.

This completed merged file will allow the investigators to address the following specific objectives: a) Develop and test alternative methods for summarizing the longitudinal health care utilization data; b) Describe the health care utilization behaviours of those over 60; c) Identify and explain the demographic, social and psychological characteristics of those 60 or older who are either very low or very heavy utilizers of medical and hospital services; d) Examine the influence of social supports on health services utilization behaviours among those over 60; e) Test the validity of the "needs assessment profile methods" developed from the Aging In Manitoba (1973) survey as indicators of home care and personal care home service utilization and as predictors of subsequent utilization of medical services; f) investigate the relationship between selected psycho-social factors, e.g. Life Satisfaction, Self-perception of Health,

and Social Activity as assessed in 1971 and subsequent morbidity and morality. For those interested in more detail on the above issues, you will find them in Vol. 3, No. 3 of Essence in the article on the first Pilot Study of 100 index cases.

METHODS:

This project has constructed two types of utilization files. The first of these is the rather usual summary file of selected health service utilization variables merged with interview data for analytic purposes. The second utilization file is a locator file which identifies the use of any health service and documents the location of the individual on each of the almost three thousand days of the study. To date, this locator file has not been summarized and merged directly with the interview data. However, we do know from this file that some persons have consumed no health service during the entire nine years; others have consumed no service and the only entry on the file is their date of death; still others have consumed unbelievably large amounts of service, in fact one respondent had some health action on 738 consecutive days but then within the next two years had only 98 days of service consumption.

It is obvious from the foregoing that there are many patterns of use which can be identified given just the range of variability from no service use to several hundred days of health service use. While we are still identifying patterns and combining some as sub-sets of a broader category and sub-dividing the low, medium, and high utilizers of selected services for the year prior to and following the interview.

The remainder of this paper will be spent discussing the characteristics of these three broad categories or levels of health service utilization. Almost without exception the nature of the data presented here would not be available from health service administrative records or reports; but are available in this case because these utilization data have been merged with the survey interview data. These data relate to the 4558 individuals for whom complete data existed for the twenty-four months studied. The remaining 236 individuals for whom incomplete utilization data were available have been studied and where they differ from the 4558, this will be identified.

Of the many measures of health service utilization, the five measures which have been selected for discussion in this report are: the number of ambulatory visits; the number of ambulatory services; the average length of stay in acute hospital; the percent of ambulatory visits for chronic care; and the percent of ambulatory services for chronic care. These measures were selected because they

reflect the broad range of the health service utilization spectrum more adequately than many of the other more specific measures. It should be noted that due to the variability in distributions of cases within each utilization measure that the percentage of cases which have been designated as low, medium, and high varies from measure to measure and from level to level. These distributions are noted on the accompanying tables for each variable.

In order to facilitate the reading of the accompanying tables a brief description of the utilization measures is essential. Ambulatory Visits and Ambulatory Services are determined from the medical claims records and are the summary counts of all such visits and services consumed during the year prior to the interview (Year 1) and the year following the interview (Year 2). Each such claim includes the diagnosis (according to ICDA-8) relative to the visit or service. Every ICDA-8 diagnosis (three digit level) has been classified as acute or chronic. Therefore the percent of visits and services for chronic care refers to those diagnoses classified as chronic from the medical claims records and represents a portion of all ambulatory visits and services. The only utilization measure, reported here, which has been taken from the hospital claims records is the average length of acute hospital stay. This measure is calculated from the number and length of acute hospital admissions. In this case, each hospital in the province is identified as being either acute or chronic (extended care units or facilities) and acute stays are those which occur in acute hospitals regardless of diagnoses recorded on admission of the respondent to the hospital.

FINDINGS:

It is of interest to note that 93% of the 4558 sample was alive at the end of the two year period. To date, the percentage of the 236 who were alive at the end of the two years is unknown, but it is probable that the percentage will be considerably less than 93%. The category of low utilization will by definition include the seven percent of deceased respondents for the time following their death. This group may be deleted from analysis for more detailed study as has been done in the companion paper being presented by Dr. Mossey tomorrow. However, for purposes of initial description and for later considerations of health planning relative to an elderly population, their inclusion is instructive.

The only demographic data reported here which could have been derived from the health service administrative records is the age and sex distribution as reported in Table 1. As expected, the largest cohort in the sample is the youngest cohort (65-69 years of age) with 27.2% of the sample in this cohort. Just under

four percent of the sample is 90 or over. Similarily, as expected, there are more females in the sample than males 53.2% versus 46.8%. The 236 residual cases are distributed differently with the largest cohort being those 75-79 years of age (25.8%) and with more males (53.8%) than females (46.2%).

Generally speaking, the distribution of utilization by age cohorts is very similar to the distribution of the sample. Therefore, the percentage utilizing services is approximately the same as the percentage as the sample. Virtually all the utilization categories are largest in the youngest cohort and the youngest cohort has a larger percetnage in the low utilization category than they represent in the sample, except for ambulatory services. The only utilization category in which the distribution does not parallel the distribution of the sample is in high utilization of average length of acute stay wherein the youngest cohort is a much smaller percent (17.0% in Year 1 and 15.9% in Year 2) than the 27.2% in the sample. By and large, the distribution of utilization according to sex also closely approximate the sex distribution of the sample. In most utilization categories females are slightly over represented at the high utilization level and several of the medium level utilization categories. However, females are under-represented in the high level of average length of acute stay; in fact, in Year 2 high utilization is exactly equally distributed between males and females.

Table 2 shows that just over half the respondents are married and just under half of the sample lives in the same household as their nearest (in the sense of proximity) relative and another 30.7% live in the same neighbourhood or community as their nearest relative. The excess of those married over those whose nearest relative lives in the same household can be explained, in part, by the occurance of one spouse living in the community and the other spouse residing in a personal care home (nursing home). The married respondents are slightly under-represented at the high levels of utilization except for ambulatory services including those for chronic care. The single respondents are over-represented at the high levels of utilization only in the average length of acute stay in Year 2 (14.0% versus 10.7%); however, the widowed respondents are over-represented at the high levels of utilization in virtually every category except ambulatory services. Those whose nearest relative is in the same household are under-represented in every high level utilization category except ambulatory services. Those whose nearest relative lives in the same neighbourhood are over-represented in every high level util-

ization category. On the other hand, those whose nearest relative is at a greater distance are over-represented at the high levels only in the average length of acute hospital stay in Year 2.

In Table 3 the respondents are considered according to their Mental Status, as measured by the Mental Status Questionnaire (Kahn, et. al. 1961) and their sample status; that is living in the community (75%) or living in a residential facility (25%). The latter includes those living in senior citizens housing as well as those receiving care in a personal care home or other care facility. The community residents are under-represented in the high levels in most utilization categories except ambulatory services and to a lesser extent in the chronic care categories. On the other hand, facility residents are very much over-represented at the high levels in average length of acute hospital stay, especially in Year 1 and in ambulatory visits. When considering Mental Status, those with excellent status (score 9-10) are over-represented at the high levels in every utilization category except average length of acute hospital stay. At the other extreme, those with the poorest mental status (score 0-2) are under-represented at the high levels in every utilization category except average length of acute hospital stay in which they are substantially over-represented.

Table 4 presents the ethnic descent of the sample and their retirement status. Those of British Isles and French descent tend to be over-represented at the high level in all categories of utilization. By and large, the other ethnic groups are under-represented at the high levels in all categories with the notable exception that those of German, Dutch and Scandinavian descent and fifth generation Canadians are substantially over-represented at the high level in average level of acute hospital stay in Year 1 and to a much lesser extent for the Germanic groups in Year 2, as well. It bears mention that unlike the younger adult populations, the elderly Native Canadian Indian and Inuit are markedly under-represented at the high levels of all utilization categories. The discrepancy between the sample and the residual cases is particularly noticable relative to retirement status with almost 13% more retired residual cases than sample respondents. Those who are still employed (which includes non-retired housewives) are under-represented at the high levels of all utilization categories except ambulatory services. By contrast, those who are retired are heavily over-represented at the high level in average length of acute hospital stay and considerably under-represented at the high level in

ambulatory services.

Table 5, shows the distribution of the sample by major occupational categories and years of education. Both those with the least and most education are under-represented at the high levels in all utilization categories except those with the least education are over-represented at the high level in average length of acute stay in Year 2 and those with the most education are over-represented in high ambulatory services utilization. Most of those with 5 to 12 years of education are over-represented at the high levels in all utilization categories especially in ambulatory services and those with 9 to 12 years of education also are over-represented especially in the average length of acute stay in Year 1. The primary occupations including farming are over-represented at the high levels in the average length of acute hospital stay in Year 2 and only for farming also in Year 1. The secondary and tertiary occupations are over-represented at the high levels in ambulatory services utilization.

Tables 6-8 present utilization data according to the responses to specific survey interview items. In Table 6 the items relate to self-perceived health status and to general satisfaction with life. In the case of the former the question asked was "In comparison with other people your age, would you say your health is excellent, good, fair, poor or bad?" Those who perceived their health as being excellent are under-represented at the high levels of utilization in all categories except ambulatory services in Year 1. On the other hand, those who perceived their health as poor or bad are over-represented at the high levels in utilization of ambulatory visits and in average length of acute hospital stay. Those who perceived their health as good or fair are over-represented at the high levels in utilization of both the percent of ambulatory visits and ambulatory services for chronic care. The second question reflected in Table 6 was "How would you describe your satisfaction with life in general at present: excellent, good, fair, poor or bad?" Those who perceived their satisfaction with life as excellent are generally under-represented at the high levels of utilization except for ambulatory services and chronic care utilization in Year 1. Those whose satisfaction was poor or bad are over-represented at the high levels in all utilization categories except those for chronic care, where those whose satisfaction with life was good or fair are over-represented at the high levels.

Table 7 reports on the number of conditions which respondents identified

as having or as being affected by the after-effects from a list of 15 specific health conditions. It is interesting to note that 14% of the respondents reported that they were currently affected by five or more health conditions. Those who reported no conditions are under-represented at high levels in all categories of utilization. Those with one condition are under-represented at high levels in all categories except ambulatory services in Year 2. Those affected by two through four conditions are over-represented at high levels in all the chronic care categories of utilization and those reporting five or more conditions are over-represented at high levels in all chronic care categories except the percent of ambulatory visits for chronic care in Year 1. For that matter, those affected by five or more conditions are over-represented at the high levels of all categories of utilization except those with six conditions relative to ambulatory services in Year 2. Those with three and four conditions are over-represented especially at high levels in average length of acute hospital stay in both years.

The questions reflected in Table 8, related to receiving treatment currently for a previously identified condition and the length of time spent in hospital in the previous year. 45.6% of the respondents reported not needing treatment, while 50.9% reported receiving needed treatment and 3.5% reported not receiving needed treatment for one or more of the 15 health conditions reported in Table 7. Those not needing treatment and those who reported not receiving needed treatment are under-represented at high levels in all utilization categories. Consequently, those receiving needed treatment are over-represented at high levels in all categories of utilization. Slightly over three-quarters of the sample reported spending no time in the hospital within the previous year; 15.5% spent less than a month of the previous year in the hospital while 8.5% of the respondents spent more than a month during the previous year in the hospital. Those who reported no hospital stay are under-represented at high levels in all categories of utilization except ambulatory services in Year 2 and percent of ambulatory visits for chronic care. By contrast, those who spent more than a month of the previous year in the hospital are over-represented at high levels in the utilization of ambulatory visits as well as in average length of acute hospital stay.

CONCLUSIONS:

In summary, the levels of utilization of selected health services when related to several demographic and descriptive characteristics in general,

conform, in direction and pattern, to the expectations from previous cross-sectional studies. There are some notable exceptions; e.g., women were not over-represented at high levels as much as expected and in fact were under-represented in utilization of acute hospitalization as measured by average length of stay. Further, the over-representation of the youngest cohort at high levels of ambulatory services though not ambulatory visits was not exactly as expected. Similarily, those who were married and whose nearest relatives lived in the same household were over-represented at high levels in ambulatory services but not ambulatory visits and again, somewhat unexpectedly those who were single and those whose nearest relatives lived at a distance were over-represented at high levels only in average length of acute hospitalization in Year 2. While the facility sample was over-represented at high levels in average length of acute hospitalization as expected, the facility sample was also over-represented at high levels in utilization of ambulatory visits which was not expected. Also unexpectedly, those with excellent mental status were under-represented at high levels only in average length of acute hospital stay while those with the poorest mental status were over-represented at high levels only in average length of acute hospitalization. It was also expected that Native Canadians would be over-represented at high levels in all utilization categories but they were actually under-represented at high levels in all utilization categories. The over-representation of those whose major occupation was a primary occupation at high levels in average length of acute hospitalization was similarily unexpected. Finally, those who reported being affected by three or four (not those with five or more) conditions were over-represented at high levels in average length of acute hospitalization. It should be noted though, that those with five or more conditions were over-represented at high levels in chronic care utilization.

Each of the expected and unexpected findings will be further tested as the data base is expanded to include the remaining six years of health service utilization records and the remaining respondents. Much is still to be undertaken and much further testing is still required. However, the preliminary findings reported, here, are encouraging both in confirmation of expectations from previous research and in the unexpected variations which, if confirmed in further analyses, will open many new avenues of investigation in the utilization of health services by an aging population. The implications for health services

planning and policy making relative to the aging of our societies, given especially the unexpected findings, is substantial.

TABLE 1 PERCENTAGE OF RESPONDENTS BY LEVELS OF SELECTED UTILIZATION IN YEARS ONE AND TWO BY AGE AND BY SEX

Levels of Utilization / Age Cohorts & Sex		AGE							SEX	
		65-69	70-74	75-79	80-84	85-89	90-94	95+	Male	Female
Ambulatory Visits	Year One 33% Low	30.2	24.1	19.8	13.4	9.1	2.3	1.1	51.1	48.9
	Year One 33% Medium	27.2	24.5	19.4	15.3	9.7	3.1	0.8	46.1	53.9
	Year One 33% High	24.9	23.9	21.1	16.9	9.5	3.3	0.5	43.5	56.5
	Year Two 33% Low	29.6	26.0	18.2	12.8	9.4	2.5	1.3	50.9	49.1
	Year Two 33% Medium	27.3	22.9	20.7	16.7	8.9	3.2	0.6	47.6	52.4
	Year Two 33% High	25.5	24.0	21.3	16.1	9.8	3.0	0.5	42.5	57.5
Ambulatory Ser.	Year One 50% Low	25.9	22.6	19.5	15.7	11.5	3.8	1.1	48.9	51.1
	Year One 25% Medium	26.5	26.4	21.8	13.9	7.9	3.0	0.7	45.6	54.4
	Year One 25% High	30.9	25.9	20.4	15.5	6.0	1.2	0.1	43.1	56.9
	Year Two 50% Low	26.0	23.6	18.9	15.4	11.3	3.7	1.1	49.9	50.1
	Year Two 25% Medium	26.1	23.8	20.9	16.2	8.8	3.1	0.8	44.2	55.8
	Year Two 25% High	30.9	25.5	22.1	14.1	6.3	1.1	0.1	42.3	57.7
Av. Length Stay Acute	Year One 80% Low	28.7	24.2	20.1	14.5	9.0	2.9	0.8	46.2	53.8
	Year One 10% Medium	25.0	22.5	20.5	17.9	10.3	2.8	0.9	49.8	50.2
	Year One 10% High	17.0	25.0	20.6	19.5	13.1	4.0	0.8	49.0	51.0
	Year Two 80% Low	29.0	24.6	19.5	14.5	8.7	2.7	0.7	46.2	53.8
	Year Two 10% Medium	25.0	22.3	21.5	17.5	10.5	2.9	0.5	47.7	52.3
	Year Two 10% High	15.9	23.5	23.4	18.2	13.0	4.8	1.3	50.0	50.0
% Visits for Chr. Care	Year One 25% Low	31.1	24.6	19.0	13.8	8.4	2.5	1.4	51.9	48.1
	Year One 35% Medium	25.5	24.7	19.6	16.0	9.9	3.7	0.8	45.0	55.0
	Year One 40% High	26.4	23.6	21.5	15.9	9.7	2.7	0.5	45.1	54.9
	Year Two 25% Low	29.5	24.9	18.9	13.9	9.1	3.0	1.2	51.5	48.5
	Year Two 35% Medium	25.4	24.0	21.4	15.7	9.8	3.1	0.6	43.7	56.3
	Year Two 40% High	27.7	23.9	19.7	16.0	9.1	2.8	0.8	46.8	53.2
Services for Chronic Care	Year One 60% Low	26.5	23.0	19.5	15.5	10.9	3.6	0.9	48.8	51.2
	Year One 20% Medium	32.0	26.2	21.1	14.7	4.8	1.1	0.0	42.9	57.1
	Year One 20% High	25.8	26.4	21.5	15.4	8.5	2.1	0.3	43.7	56.3
	Year Two 60% Low	26.1	23.6	19.6	15.3	11.0	3.5	0.9	49.1	50.9
	Year Two 20% Medium	31.2	27.7	21.7	13.9	4.8	0.8	0.0	43.7	56.3
	Year Two 20% High	27.4	23.0	20.7	16.7	8.4	2.7	0.8	41.7	58.3
Study Sample (N=4558)		27.2	24.2	20.2	15.3	9.3	3.0	0.8	46.8	53.2
Residual Cases (N=236)		21.2	20.3	25.8	14.8	10.9	5.0	1.6	53.8	46.2

TABLE 2 PERCENTAGE OF RESPONDENTS BY LEVELS OF SELECTED UTILIZATION IN YEARS ONE AND TWO BY MARITAL STATUS AND BY LOCATION OF NEAREST RELATIVE

Levels Of Utilization / Marital & Relatives Loc.		MARITAL STATUS				LOCATION OF RELATIVE				
		Married	Single	Widow.	Divor.	House-hold	Building	Neigh-bour-hood	Less Than 1 Day	Further & No Rel.
Ambulatory Visits	Year One 33% Low	48.4	14.7	33.6	3.3	48.7	1.1	27.2	14.0	9.0
	Year One 33% Medium	53.8	8.6	36.4	1.3	52.0	1.8	28.0	11.2	7.0
	Year One 33% High	48.5	8.9	40.5	2.2	46.6	1.4	32.4	11.8	7.8
	Year Two 33% Low	49.1	14.8	33.8	2.4	49.5	0.9	26.5	13.8	9.4
	Year Two 33% Medium	54.1	8.0	34.9	2.9	51.8	1.6	28.3	11.2	7.2
	Year Two 33% High	47.4	9.7	41.4	1.3	46.0	1.7	32.7	12.0	7.5
Ambulatory Ser.	Year One 50% Low	46.5	13.1	37.9	2.4	47.4	1.6	27.8	14.5	8.7
	Year One 25% Medium	52.7	8.5	37.2	1.5	51.0	1.4	29.1	10.1	8.4
	Year One 25% High	56.1	7.2	34.6	2.1	51.0	1.0	33.0	9.1	6.0
	Year Two 50% Low	47.4	12.9	37.3	2.4	47.7	1.5	28.5	13.5	8.8
	Year Two 25% Medium	52.4	8.7	36.6	2.2	49.8	1.6	28.6	12.3	7.7
	Year Two 25% High	54.2	7.6	36.4	1.7	51.0	1.2	31.7	9.9	6.3
Av. Length Acute Stay	Year One 80% Low	50.8	11.4	35.3	2.4	48.7	1.3	29.0	12.5	6.3
	Year One 10% Medium	51.2	6.4	41.0	1.4	51.2	1.7	31.2	11.2	8.5
	Year One 10% High	43.1	8.9	46.6	1.2	49.7	2.1	30.5	11.4	4.7
	Year Two 80% Low	51.1	10.7	35.8	2.3	49.0	1.4	29.3	12.5	7.8
	Year Two 10% Medium	50.2	8.0	39.8	1.8	50.8	1.3	29.5	11.1	6.3
	Year Two 10% High	42.3	14.0	42.3	1.4	46.5	1.6	29.3	10.9	11.6
% Visits for Chr. Care	Year One 25% Low	49.0	15.7	32.0	3.2	49.5	1.0	26.4	13.4	9.6
	Year One 35% Medium	51.0	8.2	39.2	1.5	47.9	1.8	30.9	12.1	7.4
	Year One 40% High	50.1	9.7	38.0	2.1	49.7	1.4	29.8	11.7	7.4
	Year Two 25% Low	48.6	14.4	34.5	2.5	50.9	1.0	24.9	13.6	9.5
	Year Two 35% Medium	48.9	9.3	39.7	2.0	46.9	1.9	32.2	11.5	7.5
	Year Two 40% High	52.6	9.5	35.6	2.2	50.0	1.1	29.3	12.2	7.3
% Services for Chronic Care	Year One 60% Low	47.7	12.5	37.5	2.2	47.6	1.7	28.0	14.1	8.6
	Year One 20% Medium	56.9	6.7	34.2	2.2	49.5	1.3	32.8	9.8	6.5
	Year One 20% High	52.4	8.1	37.4	2.0	53.1	0.7	30.5	8.6	7.1
	Year Two 60% Low	48.1	12.2	37.3	2.3	47.8	1.5	28.7	13.4	8.6
	Year Two 20% Medium	56.3	7.7	34.3	1.6	50.7	1.0	31.2	10.5	6.6
	Year Two 20% High	51.1	8.4	38.2	2.2	51.4	1.6	29.8	10.1	7.1
Study Sample (N=4558)		50.2	10.7	36.9	2.2	49.0	1.4	29.3	12.3	7.9
Residual Cases (N=236)		54.7	8.9	33.9	2.5	44.1	0.4	30.1	14.4	11.0

TABLE 3 PERCENTAGE OF RESPONDENTS BY LEVELS OF SELECTED UTILIZATION IN YEARS ONE AND TWO BY MENTAL STATUS AND BY SAMPLE STATUS

Levels Of Utilization / Mental Status & Sample Status		MENTAL STATUS SCORES					SAMPLE STATUS	
		9-10	7-8	5-6	3-4	0-2	Commu-nity	Faci-lity
Ambulatory Visits	Year One 33% Low	63.3	13.8	4.2	1.6	17.0	77.3	22.7
	Year One 33% Medium	73.9	12.1	3.3	1.4	9.4	76.8	23.2
	Year One 33% High	72.4	14.7	3.5	1.4	8.0	71.0	29.0
	Year Two 33% Low	65.0	13.2	4.0	1.7	16.0	77.3	22.7
	Year Two 33% Medium	72.7	12.9	3.4	1.2	9.8	78.1	21.9
	Year Two 33% High	71.6	14.5	3.6	1.5	8.8	69.9	30.1
Ambulatory Ser.	Year One 50% Low	63.2	14.5	4.4	2.1	15.8	71.4	28.6
	Year One 25% Medium	74.5	12.4	4.1	0.9	8.2	75.7	24.3
	Year One 25% High	81.3	12.6	1.7	0.5	3.8	82.0	18.0
	Year Two 50% Low	64.4	14.1	4.4	1.9	15.2	71.7	28.3
	Year Two 25% Medium	72.4	14.5	3.3	1.1	8.7	75.8	24.2
	Year Two 25% High	79.7	11.9	2.4	0.9	5.1	80.8	19.2
Av. Length Acute Stay	Year One 80% Low	70.5	13.1	3.7	1.3	11.3	75.8	24.2
	Year One 10% Medium	68.8	15.2	3.1	2.4	10.5	72.6	27.4
	Year One 10% High	66.9	15.9	3.5	1.6	12.2	69.2	30.8
	Year Two 80% Low	71.6	12.5	3.6	1.6	10.8	75.3	24.7
	Year Two 10% Medium	65.7	17.2	4.8	1.3	10.9	75.2	24.8
	Year Two 10% High	62.8	17.7	3.0	0.7	15.8	71.4	28.6
% Visits for Chr. Care	Year One 25% Low	62.6	13.3	4.7	1.8	17.6	77.6	22.4
	Year One 35% Medium	73.7	14.1	2.9	1.5	7.9	72.4	27.6
	Year One 40% High	71.4	13.3	3.7	1.2	10.4	75.4	24.6
	Year Two 25% Low	62.3	14.0	4.1	1.9	17.7	76.6	23.4
	Year Two 35% Medium	72.5	14.1	3.5	1.2	8.7	71.8	28.2
	Year Two 40% High	72.7	12.7	3.5	1.5	9.6	77.1	22.9
% Services for Chronic Care	Year One 60% Low	64.9	14.0	4.3	1.9	14.8	72.2	27.8
	Year One 20% Medium	82.2	11.9	1.8	0.5	3.5	82.0	18.0
	Year One 20% High	75.7	13.6	3.1	0.9	6.8	77.5	22.5
	Year Two 60% Low	65.6	14.1	4.1	1.7	14.4	72.2	27.8
	Year Two 20% Medium	81.4	10.4	2.4	1.0	4.9	82.8	17.2
	Year Two 20% High	73.9	14.8	3.3	1.0	7.0	76.4	23.6
Study Sample (N=4558)		70.0	13.6	3.7	1.5	11.5	74.9	25.1
Residual Cases (N=236)		61.9	11.4	3.4	2.1	21.1	58.5	41.5

TABLE 4 PERCENTAGE OF RESPONDENTS BY LEVELS OF SELECTED UTILIZATION IN YEARS ONE AND TWO BY ETHNIC CATEGORY AND BY RETIREMENT STATUS

Ethnicity & Retirement / Levels Of Utilization		ETHNIC CATEGORY							RETIREMENT STATUS		
		British Isles	East. Europe	German Scand. Nether.	Canada Five Gen.	French	Other	Native Canadian	Major Occ.	Other Occ.	Retir
Ambulatory Visits	33% Low	38.6	19.9	17.4	10.5	4.9	4.2	4.4	29.8	8.2	62.0
Year One	33% Medium	44.2	17.3	17.2	8.6	6.1	4.8	1.6	32.2	8.6	59.2
	33% High	46.6	17.1	16.4	7.7	6.3	4.6	1.2	29.1	8.1	62.7
Year Two	33% Low	40.0	20.3	15.0	10.5	5.4	4.0	4.8	30.2	8.8	59.4
	33% Medium	42.8	17.3	19.7	8.7	5.6	4.2	1.6	32.4	7.7	59.6
	33% High	46.4	17.0	16.2	7.8	6.3	5.3	1.0	28.7	8.5	61.8
Amb. Surg. Year One	50% Low	41.2	19.6	17.3	8.7	5.4	4.0	3.8	27.9	7.7	64.4
	25% Medium	45.4	14.7	19.4	9.8	6.0	3.7	0.8	32.4	9.4	58.2
	25% High	46.0	17.6	14.2	8.7	6.5	6.7	0.4	34.1	8.8	57.1
Year Two	50% Low	42.6	19.6	16.5	8.5	5.3	3.7	3.8	28.5	7.6	63.9
	25% Medium	43.9	15.7	19.5	9.2	7.1	3.9	0.8	31.5	9.1	59.4
	25% High	44.1	16.8	16.4	9.4	5.9	6.8	0.5	33.3	9.1	57.9
Inv. Lengthy Acute Care	80% Low	43.2	18.5	16.6	9.1	6.0	4.3	2.2	31.5	8.5	59.9
Year One	10% Medium	38.6	17.6	22.9	5.7	5.5	5.7	4.0	30.2	8.8	61.0
	10% High	48.0	14.9	25.2	10.3	4.7	5.8	1.9	20.5	5.6	73.9
Year Two	80% Low	43.1	18.4	16.6	9.0	6.0	4.7	2.1	31.6	8.3	60.1
	10% Medium	41.6	17.2	18.2	9.3	5.7	3.9	3.9	30.5	7.4	62.2
	10% High	46.7	17.2	17.9	7.2	4.4	4.7	1.9	20.0	9.3	70.7
Inv. Chr. Care Year One	25% Low	38.5	21.4	16.1	9.9	4.7	4.8	4.6	30.1	7.9	62.0
	35% Medium	46.2	16.2	16.4	8.7	7.0	4.1	1.4	30.2	8.1	61.8
	40% High	43.6	17.7	18.1	8.5	5.4	4.9	1.7	30.7	8.7	60.6
Year Two	25% Low	39.7	19.8	15.5	9.7	5.3	4.7	5.2	28.5	8.6	62.9
	35% Medium	45.2	16.1	17.2	8.8	6.7	4.7	1.3	31.7	7.6	60.7
	40% High	43.7	19.1	17.8	8.4	5.1	4.3	1.5	30.3	8.8	60.9
Chronic Care Year One	60% Low	42.1	19.1	16.9	8.9	5.5	4.0	3.4	28.5	7.9	63.5
	20% Medium	43.1	17.1	15.2	10.2	7.6	6.7	0.4	35.4	9.2	55.5
	20% High	46.9	15.9	19.7	7.9	5.3	4.7	0.5	31.7	8.6	59.6
Year Two	60% Low	43.1	18.9	16.6	8.8	5.5	3.8	3.4	28.8	7.8	63.4
	20% Medium	45.1	16.2	16.2	8.9	5.2	7.9	0.5	32.1	10.2	57.7
	20% High	42.1	17.1	19.1	9.4	7.5	4.1	0.7	34.1	8.0	58.0
Study Sample (N=4558)		43.3	18.1	17.0	8.9	5.8	4.6	2.3	30.4	8.3	61.3
Residual Cases (N=236)		47.5	16.1	13.2	8.1	7.2	4.6	3.4	22.0	4.2	73.7

TABLE 5 PERCENTAGE OF RESPONDENTS BY LEVELS OF SELECTED UTILIZATION IN YEARS ONE AND TWO BY EDUCATION AND BY MAJOR OCCUPATION

Education & Occ. / Levels Of Utilization		YEARS OF ECUATION				MAJOR OCCUPATIONS				
		Less Than 5 Yr.	5-8 Years	9-12 Years	More Than 12 Yr.	Primary Occ.	Farming	House-wife	Labourer.	Teritary Occ.
Ambulatory Visits	Year One 33% Low	22.9	36.7	21.9	3.7	4.0	19.9	36.3	16.6	21.0
	Year One 33% Medium	23.0	37.8	25.3	6.1	1.8	21.8	37.0	14.0	23.9
	Year One 33% High	23.1	38.5	27.1	3.7	1.3	20.9	40.1	14.5	22.0
	Year Two 33% Low	24.1	36.3	21.6	4.1	3.5	19.8	35.5	16.4	22.2
	Year Two 33% Medium	22.3	37.3	26.3	5.2	2.0	22.1	38.0	13.9	22.9
	Year Two 33% High	22.7	39.2	26.2	4.1	1.4	20.5	39.7	14.9	21.6
Ambulatory Ser.	Year One 50% Low	24.3	36.3	22.3	3.4	3.0	22.7	37.8	14.8	19.5
	Year One 25% Medium	22.7	39.5	25.1	4.9	1.5	23.0	37.6	15.0	22.0
	Year One 25% High	20.4	39.2	30.6	6.3	1.4	14.9	38.4	15.6	28.7
	Year Two 50% Low	25.0	35.2	22.6	3.9	3.2	22.6	36.7	14.5	20.5
	Year Two 25% Medium	21.2	41.4	24.1	4.8	1.3	24.4	39.1	14.2	19.9
	Year Two 25% High	20.1	39.9	30.2	5.4	1.0	14.5	39.3	16.7	27.5
Av. Length Acute Stay	Year One 80% Low	22.6	37.7	25.6	4.8	2.4	19.2	38.1	15.5	23.3
	Year One 10% Medium	28.4	37.4	21.4	2.6	3.0	29.8	36.2	12.6	16.1
	Year One 10% High	21.9	37.8	27.5	3.5	1.2	26.6	37.8	13.3	19.4
	Year Two 80% Low	22.5	37.6	25.2	5.0	2.0	23.3	33.7	14.7	23.1
	Year Two 10% Medium	25.1	38.4	24.7	2.3	2.2	19.5	38.1	15.4	23.4
	Year Two 10% High	24.4	37.0	21.9	3.5	2.9	26.9	39.3	13.0	15.5
% Visits for Chr. Care	Year One 25% Low	23.2	37.2	20.7	3.4	4.3	20.7	35.6	16.7	20.1
	Year One 35% Medium	24.4	38.0	26.5	4.4	1.6	22.4	38.6	13.7	22.7
	Year One 40% High	21.6	37.6	26.1	5.3	1.5	19.5	38.7	15.1	23.3
	Year Two 25% Low	23.4	36.9	20.5	3.9	3.9	20.4	34.6	17.3	21.0
	Year Two 35% Medium	23.3	38.5	25.8	4.6	1.7	21.9	39.9	13.5	21.5
	Year Two 40% High	22.3	37.2	27.1	4.8	1.7	20.0	38.0	15.0	24.0
% Services for Chronic Care	Year One 60% Low	23.6	37.0	22.4	4.0	2.9	22.2	37.4	14.9	20.5
	Year One 20% Medium	19.9	39.8	30.8	6.3	0.9	14.2	38.4	17.6	28.3
	Year One 20% High	23.7	38.0	27.7	4.5	1.7	22.0	38.8	13.3	22.9
	Year Two 60% Low	24.0	36.1	23.2	4.2	3.0	22.2	36.6	14.4	21.5
	Year Two 20% Medium	18.4	40.0	31.0	6.0	1.3	14.9	36.8	18.2	28.5
	Year Two 20% High	24.1	40.8	24.9	3.8	1.1	21.8	42.9	13.9	19.6
Study Sample (N=4558)		23.0	37.7	24.9	4.5	2.3	20.8	37.9	15.0	22.3
Residual Cases (N=236)		22.9	33.9	22.9	2.5	2.1	22.5	35.2	14.8	24.1

*10% of the Study Sample and 17.8% of the residual cases did not respond to this question due to proxied interviews.

TABLE 6 PERCENTAGE OF RESPONDENTS BY LEVELS OF SELECTED UTILIZATION IN YEARS ONE AND TWO BY HEALTH STATUS AND BY GENERAL SATISFACTION*

Levels Of Utilization / Health Status & Satisfaction		HEALTH STATUS				GENERAL SATISFACTION			
		Excellent	Good	Fair	Poor/ Bad	Excellent	Good	Fair	Poor/ Bad
Ambulatory Visits	Year One 33% Low	13.1	45.6	20.4	20.9	15.3	52.7	13.5	1.8
	Year One 33% Medium	13.3	46.8	25.6	14.4	16.9	56.2	15.5	2.3
	Year One 33% High	9.3	38.5	32.9	19.3	14.7	50.3	16.6	3.7
	Year Two 33% Low	13.8	46.3	20.6	19.3	15.3	54.7	12.5	1.9
	Year Two 33% Medium	12.8	46.4	24.7	16.1	17.6	55.5	14.7	2.2
	Year Two 33% High	9.3	38.3	33.1	19.3	14.0	55.1	18.1	3.7
Ambulatory Ser.	Year One 50% Low	12.1	41.7	23.9	22.2	14.0	52.0	15.6	2.6
	Year One 25% Medium	9.9	46.8	29.7	13.6	16.3	58.7	15.7	2.3
	Year One 25% High	12.7	44.5	29.5	13.2	18.6	59.0	14.1	2.9
	Year Two 50% Low	12.0	43.7	23.6	20.7	14.7	52.8	14.8	2.8
	Year Two 25% Medium	12.4	42.4	29.8	15.4	14.7	59.2	15.0	1.7
	Year Two 25% High	11.1	43.6	30.1	15.2	18.0	56.7	16.4	2.9
Av. Length Acute Stay	Year One 80% Low	13.1	44.8	24.9	17.2	16.1	55.1	14.8	2.4
	Year One 10% Medium	7.6	38.8	31.9	21.7	14.8	57.4	14.5	3.3
	Year One 10% High	4.9	36.4	35.0	23.8	12.1	52.4	19.8	4.2
	Year Two 80% Low	13.4	45.4	25.1	16.1	16.2	56.1	14.6	2.2
	Year Two 10% Medium	5.9	42.6	27.9	23.5	12.6	54.9	17.2	4.0
	Year Two 10% High	7.2	28.4	36.3	28.2	14.7	47.2	18.4	3.9
% Visits for Chr. Care	Year One 25% Low	12.7	46.3	19.9	21.1	13.9	52.7	14.3	2.0
	Year One 35% Medium	11.9	40.8	29.5	17.9	16.2	55.8	16.7	3.7
	Year One 40% High	11.2	44.0	28.1	16.8	16.1	56.0	14.6	2.2
	Year Two 25% Low	14.1	45.3	19.6	21.1	15.0	53.6	12.5	2.0
	Year Two 35% Medium	11.2	41.4	29.9	17.5	16.0	56.3	15.9	3.4
	Year Two 40% High	10.9	44.3	27.7	17.0	15.6	54.8	16.6	2.3
% Services for Chronic Care	Year One 60% Low	12.5	42.0	24.6	21.0	14.4	52.9	15.3	2.8
	Year One 20% Medium	12.6	45.9	29.5	12.1	17.4	61.6	13.6	2.7
	Year One 20% High	9.2	45.8	30.1	14.9	17.7	56.6	16.4	2.3
	Year Two 60% Low	12.6	43.7	23.6	20.1	15.0	53.7	14.4	2.8
	Year Two 20% Medium	10.8	41.8	31.7	15.8	17.2	58.5	16.5	2.4
	Year Two 20% High	10.2	44.0	31.2	14.5	15.9	56.4	16.9	2.5
Study Sample (N=4558)		11.8	43.4	26.5	18.3	15.6	55.1	15.3	2.6
Residual Cases (N=236)		10.2	36.4	23.7	29.7	15.7	42.4	16.5	5.5

*11.4% of Study Sample and 19.9% of the residual cases did not respond to this question due to proxied interviews.

TABLE 7 PERCENTAGE OF RESPONDENTS BY LEVELS OF SELECTED UTILIZATION IN YEARS ONE AND TWO BY CURRENT TREATMENT AND BY TIME IN HOSPITAL

Utilization Level / Treatment & Hospital Time		TREATMENT			TIME IN HOSPITAL			
		None Needed	Being Rec'd	Needed Not Rec'd	More Than Yr. Ago	Less Than Wk In Year	Wk. to Month In Year	More Than Mo. In Year
Ambulatory Visits	Year One 33% Low	60.2	34.7	5.1	86.3	1.9	3.2	8.5
	Year One 33% Medium	47.7	49.0	3.4	79.5	4.3	10.1	6.1
	Year One 33% High	30.6	67.3	2.2	63.1	6.3	19.4	10.8
	Year Two 33% Low	58.5	36.6	4.9	81.6	3.1	5.7	9.5
	Year Two 33% Medium	50.8	45.6	3.6	78.4	3.5	11.5	6.3
	Year Two 33% High	30.1	67.6	2.3	68.6	5.9	15.5	9.7
Ambulatory Ser.	Year One 50% Low	48.9	46.9	4.2	77.3	3.6	8.9	9.9
	Year One 25% Medium	45.0	52.0	3.0	74.2	5.2	12.7	7.8
	Year One 25% High	38.9	58.8	2.3	73.8	5.0	14.9	6.1
	Year Two 50% Low	49.6	46.2	4.2	75.3	4.0	10.3	10.2
	Year Two 25% Medium	41.5	55.6	2.9	75.6	4.4	12.8	7.2
	Year Two 25% High	40.0	57.1	2.5	77.1	4.7	11.8	6.2
Av. Length Acute Stay	Year One 80% Low	48.8	47.5	3.7	87.7	2.2	4.1	5.9
	Year One 10% Medium	33.1	63.8	3.1	29.0	23.6	37.1	10.2
	Year One 10% High	29.9	67.6	2.6	19.3	3.5	47.3	29.4
	Year Two 80% Low	49.3	47.0	3.8	80.6	3.4	8.4	7.4
	Year Two 10% Medium	32.7	63.6	3.6	59.3	9.3	20.0	11.1
	Year Two 10% High	34.0	64.7	1.4	59.8	4.0	21.6	14.0
% Visits for Chr. Care	Year One 25% Low	60.8	33.9	5.3	85.3	2.1	3.8	8.7
	Year One 35% Medium	38.9	58.0	3.1	68.0	5.7	17.0	8.9
	Year One 40% High	42.0	55.3	2.7	76.9	4.3	10.6	8.1
	Year Two 25% Low	59.5	36.0	4.5	80.8	2.8	5.9	10.4
	Year Two 35% Medium	38.3	58.7	3.0	71.2	5.7	14.8	8.0
	Year Two 40% High	43.6	52.9	3.4	77.3	3.8	11.0	7.8
% Services for Chronic Care	Year One 60% Low	48.3	47.4	4.2	77.6	3.7	9.0	9.6
	Year One 20% Medium	40.3	57.3	2.5	72.3	6.0	15.2	6.3
	Year One 20% High	41.3	56.6	2.1	73.1	4.6	14.9	7.1
	Year Two 60% Low	49.9	46.0	4.1	76.0	4.0	9.9	9.9
	Year Two 20% Medium	38.7	59.0	2.4	77.7	4.2	13.0	5.1
	Year Two 20% High	37.8	59.4	2.8	73.4	5.2	13.9	7.3
Study Sample (N=4558)		45.6	50.9	3.5	75.8	4.3	11.2	8.5
Residual Cases (N=236)		37.3	61.4	1.3	67.4	5.1	11.9	15.3

TABLE 8 PERCENTAGE OF RESPONDENTS BY LEVELS OF SELECTED UTILIZATION IN YEARS ONE AND TWO BY TOTAL CONDITIONS LISTED

Utilization Level / Total Conditions		None	One	Two	Three	Four	Five	Six	Seven Or More
Ambulatory Visits	Year One 33% Low	21.1	24.8	22.1	13.5	8.3	4.8	3.0	2.4
	Year One 33% Medium	12.8	25.6	21.9	17.5	11.2	5.7	3.0	2.3
	Year One 33% High	8.8	17.5	22.7	17.3	13.7	8.6	5.1	6.3
	Year Two 33% Low	20.9	25.6	22.0	13.6	8.4	4.7	3.0	1.9
	Year Two 33% Medium	13.9	23.7	23.0	16.6	11.2	5.6	2.7	2.8
	Year Two 33% High	8.5	18.7	21.8	17.8	13.3	8.7	5.3	5.5
Ambulatory Ser.	Year One 50% Low	15.8	22.5	23.1	14.8	10.7	6.0	3.8	3.3
	Year One 25% Medium	11.3	22.6	23.0	17.5	11.7	6.7	3.3	3.8
	Year One 25% High	12.4	22.3	19.8	17.9	11.7	7.2	4.0	4.8
	Year Two 50% Low	15.9	22.7	22.2	16.0	10.4	5.7	3.6	3.5
	Year Two 25% Medium	11.2	20.4	25.6	16.0	11.8	6.6	4.6	3.7
	Year Two 25% High	12.2	23.6	19.8	16.6	12.1	7.7	3.5	4.4
Av. Length Acute Stay	Year One 80% Low	15.7	23.6	22.9	15.2	10.0	6.0	3.4	3.1
	Year One 10% Medium	9.0	17.1	18.8	21.4	14.8	7.1	4.8	6.8
	Year One 10% High	4.2	17.5	20.3	18.9	17.2	9.6	6.1	6.3
	Year Two 80% Low	15.8	24.0	22.4	15.7	10.2	5.7	3.2	3.0
	Year Two 10% Medium	7.0	17.0	22.6	18.0	13.4	9.5	5.9	6.4
	Year Two 10% High	9.3	17.7	20.7	17.2	15.6	8.4	5.3	5.8
% Visits for Chr. Care	Year One 25% Low	21.4	25.6	22.0	12.8	8.0	5.2	2.9	2.0
	Year One 35% Medium	11.1	20.5	21.6	16.3	12.2	8.3	4.5	5.6
	Year One 40% High	12.0	22.3	23.0	18.2	12.2	5.5	3.6	3.5
	Year Two 25% Low	21.6	25.5	22.4	13.3	7.9	4.2	2.8	2.3
	Year Two 35% Medium	11.2	20.6	21.1	17.9	12.4	7.1	4.4	5.3
	Year Two 40% High	11.7	22.3	23.4	16.3	12.0	7.2	3.8	3.2
% Services for Chronic Care	Year One 60% Low	15.8	22.7	22.9	14.7	10.6	6.1	3.7	3.5
	Year One 20% Medium	12.3	23.3	19.0	18.0	11.8	7.5	3.5	4.6
	Year One 20% High	9.8	21.0	23.0	19.1	12.5	6.5	4.0	4.0
	Year Two 60% Low	15.9	22.6	22.8	15.7	10.5	5.6	3.4	3.4
	Year Two 20% Medium	11.2	22.9	19.8	16.5	12.0	8.3	4.2	5.1
	Year Two 20% High	10.7	21.4	22.6	17.4	12.4	7.3	4.5	3.7
Study Sample (N=4558)		14.0	22.5	22.2	16.1	11.1	6.4	3.8	3.8
Residual Cases (N=236)		8.9	19.5	21.2	22.9	13.1	5.9	5.1	3.3